

Tobacco Use Disorder A Provider's Guide to Counseling and Medication Treatment to Help Veterans with Tobacco Cessation



Tobacco Use Disorder

A Provider's Guide to Counseling and Medication Treatment to Help Veterans with Tobacco Cessation

A VA Clinician's Guide



VA Pharmacy Benefits Management Academic Detailing Service Real Provider Resources Real Patient Results

Your Partner in Enhancing Veteran Health Outcomes

VA PBM Academic Detailing Service Email Group PharmacyAcademicDetailingProgram@va.gov

VA PBM Academic Detailing Service SharePoint Site https://dvagov.sharepoint.com/sites/vhaacademicdetailing

VA PBM Academic Detailing Service Public Website http://www.pbm.va.gov/PBM/academicdetailingservicehome.asp

Key Messages

Encourage every person who uses tobacco to stop — no matter their age or current health conditions.	4
If a Veteran is interested in quitting, they should be provided brief counseling and medication or referred to a tobacco cessation program.	10
Offer combination NRT, combination bupropion/ NRT, or varenicline as first-line treatment options to patients wanting to quit.	17
Offer behavioral counseling and cessation medications to Veterans with mental health disorders, substance use disorders, and HIV who are interested in quitting.	23

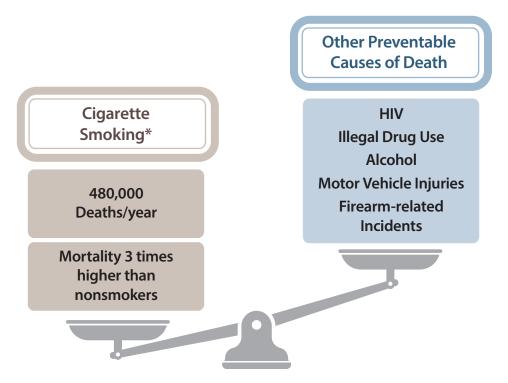
Scope of the Problem

In the United States in 2019, 34.1 million adults (14%) were cigarette smokers. When all combustible tobacco products are included, e.g., cigars, pipes, and hookahs, the rate

increases to 16.7%.¹ Overall rates of tobacco use are similar in Veterans compared to the general population, but subgroups including female Veterans, Veterans with mental health disorders and/or substance use disorders, and Veterans with HIV have higher rates of tobacco use.²

On average, cigarette smokers die 10 years earlier than people who do not smoke and smoking is responsible for more deaths than opioids and alcohol combined. Up to 50% of all tobacco users will die of tobacco-related causes.³ Tobacco and the burning of tobacco products contains more than 7,000 chemicals, including hundreds of chemicals that are toxic and approximately 70 that can cause cancer.4

Figure 1. Cigarette Smoking is the Leading
Preventable Cause of Death in the United States⁴⁻⁷

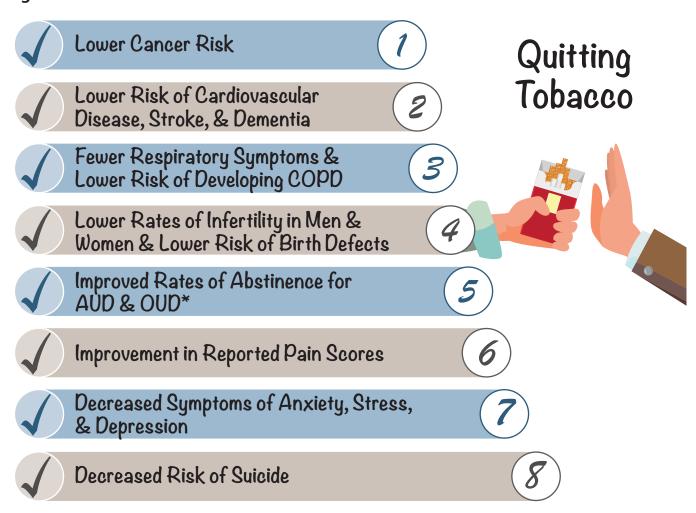


^{*}Deaths from tobacco are specifically from cigarette smoking and secondhand smoke.



For every person who dies because of cigarette smoking, at least 30 people live with a serious smoking-related illness.⁶

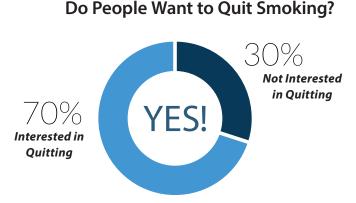
Figure 2. Benefits of Tobacco Cessation^{8–10}



^{*}AUD = alcohol use disorder; OUD = opioid use disorder

Benefits of tobacco cessation can be noticed as early as a few days after quitting. As a person abstains from using tobacco, they continue to notice benefits in their breathing, mood, energy level, sleep, and even in their finances. Ask a Veteran who uses tobacco how much money they spend each week on their tobacco product(s). They may be pleasantly surprised by the financial benefits of quitting.

Figure 3. People Who Smoke Want to Quit! However, Many Need Help to Be Successful.¹¹



Most people do want to quit smoking, but are not sure how to do it. Asking about tobacco use is the first step in having a conversation about tobacco cessation.

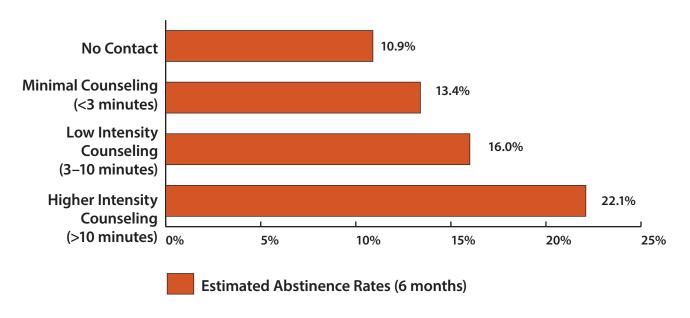
Encourage every person who uses tobacco to stop
— no matter their age or current health conditions.

Tobacco Cessation: What is Recommended?

Helping Veterans quit tobacco is everyone's responsibility. No matter if the Veteran is coming to a mental health clinic, primary care clinic, to see a clinical pharmacy specialist, or to have a blood pressure check with the nurse, tobacco use should be assessed and assistance provided to Veterans who want to quit. Studies show that any clinician can provide assistance and make a difference in helping people stop tobacco use.¹²

Figure 4. Effectiveness of Tobacco Cessation Counseling and Estimated Abstinence Rates for Various Intensity Levels of Session Length (n = 43 studies).¹²

Minimal Counseling Helps People Quit Smoking and Every Additional Minute Increases Cessation Rates.



Counseling can be done in person in an individual or group setting, by telephone with the healthcare team, or using a telephone-based quitline (Level A evidence).



There are five elements of a brief tobacco cessation intervention:¹²

Figure 5. The 5 As



- 1) ASK about tobacco use.
 - ✓ Ask about all types of tobacco and amount used each day. Ask about previous quit attempts.
- 2) ADVISE the Veteran to quit.
 - ✓ Provide clear, strong and personalized suggestions.
- 3) ASSESS readiness to quit.
 - ✓ What changes are you willing to make in the next 30 days? (e.g., reduce amount using, ready to quit in the next 30 days, start pharmacotherapy, go to group counseling).
- 4) ASSIST patients with their quit attempt.
 - ✓ Set target quit date, offer pharmacotherapy, and discuss the role of medication in treatment.
- 5) ARRANGE follow up.
 - ✓ Arrange follow up contact in clinic, by phone, refer to the VA Tobacco Quit Line (1-855-QUIT-VET), or refer to a more structured tobacco cessation program if the Veteran needs additional assistance.

Use motivational interviewing techniques, asking open-ended questions when using the 5As. Understanding why a Veteran wants to quit and their motivating factors will help in providing support during the quit attempt.

When asking about tobacco use, include all types of tobacco and nicotine products—not just cigarettes. The Veteran's response will provide a more accurate, comprehensive assessment of dependence to nicotine and help guide treatment decisions. Using more than one form of tobacco or nicotine product typically is an indication of a higher dependence to nicotine than using one form.

Additional VA Tobacco Cessation Services to Provide Support During a Quit Attempt

- ✓ Smokefree Vet: Mobile Text Message Service: www.smokefree.gov/VET
- ✓ Stay Quit Coach Mobile Application: https://mobile.va.gov/app/stay-quit-coach
- ✓ VA Tobacco and Health Webpage: www.mentalhealth.va.gov/quit-tobacco/

When asking about tobacco use, include all types of tobacco and nicotine products—not just cigarettes. The Veteran's response will provide a more accurate, comprehensive assessment of dependence to nicotine and help guide treatment decisions. Using more than one form of tobacco or nicotine product typically is an indication of a higher dependence to nicotine than using one form.

Figure 6. Non-cigarette Forms of Tobacco^{13–30}



Cigars

- Contain the same toxic and carcinogenic compounds found in cigarettes and are not a safe alternative to cigarettes
- Health problems associated with regular cigar smoking include:
 - Causes cancer of lung, esophagus, larynx, and oral cavity;
 - Causes diseases of the mouth, heart disease, stroke, and lung disease;
 - Can lead to nicotine addiction.



Smokeless Tobacco

- Forms include snuff, chewing tobacco, and dissolvable tobacco.
- Health problems associated with smokeless tobacco include:
 - Causes cancer of the mouth, esophagus, and pancreas;
 - Causes diseases of the mouth and can increase risk of heart disease and stroke;
 - Can lead to nicotine addiction.



Pipe Tobacco

- Health problems associated with regular pipe smoking include:
 - Causes cancer of the lung, oropharynx, esophagus, colon and rectum, pancreas and larynx;
 - Causes cardiovascular disease and lung disease;
 - Can lead to nicotine addiction.



Hookah – Water Pipe

- Most water pipe use in the United States is by youth and college students.
- In a one-hour hookah session, users may puff on a hookah about 200 times, which is equivalent to smoking one pack of cigarettes.
- Passing smoke through water does not make it safer:
 - Hookah smoke has high levels of toxic agents similar to cigarettes;
 - Can cause lung cancer, stomach cancer, esophageal cancer, bladder cancer, reduced lung function, and decreased fertility.

Electronic Nicotine Delivery Systems (ENDS)^{30–39}

- In 2019, 4.4% of adults used ENDS. ENDS include electronic cigarettes, vape products, hookah pens, and e-pipes.
- ENDS aerosol may contain nicotine, volatile organic compounds, cancer-causing chemicals, heavy metals, and flavoring agents like diacetyl which is linked to lung disease.
- Ask Veterans about all types of tobacco and nicotine products not just cigarettes. Try asking, "Do you use any tobacco or nicotine products, like cigarettes, smokeless/ chewing tobacco, hookahs, electronic cigarettes, or vapes like JUULs®?"
- ENDS have the potential to benefit adult smokers who are not pregnant if used as a complete substitute for regular cigarettes and other smoked tobacco products. ENDS are not safe for youth, young adults, and pregnant women, as well as adults who do not currently use tobacco products.
- ENDS can cause unintended injuries from defective batteries, including burns from fires and explosions. Exposure to the liquid that contains concentrated nicotine can be toxic to adults, children and pets.
- E-cigarette or vaping product use associated lung injury (EVALI) is a condition that is associated with using tetrahydrocannabinol (THC) containing ENDS products.

Figure 7. Should We Recommend ENDS to Help Veterans Quit Smoking?³⁹⁻⁴¹



CDC = Centers for Disease Control and Prevention. FDA = Food and Drug Administration. *More long-term studies are needed to determine if ENDS can be safely recommended to assist in tobacco cessation. Go to https://www.cdc.gov/tobacco/basic_information/e-cigarettes/.

Figure 8. Stages of Change for Quitting Tobacco⁴²

Quitting tobacco is a cyclical process for most Veterans and their readiness to quit (or stay quit) will change over time. Assess readiness to quit (or to stay quit) at each contact with a Veteran.

How many quit attempts are typical? Most estimate six to 10 attempts in a lifetime.^{43–45}

Mark Twain may have said it best: "Quitting smoking is easy: I've done it thousands of times."

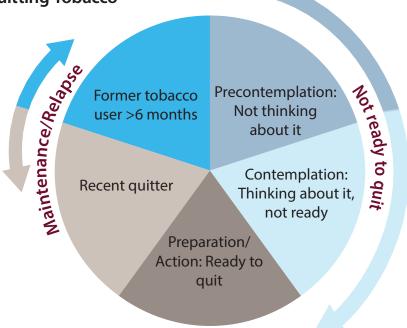


 Table 1.
 Addressing Common Concerns from Veterans About Quitting Tobacco

Patient	Provider	
I don't want counseling; I only want medication.	Medication alone helps most people, but adding counseling from a telephone or group program works even better.	
I want to try acupuncture or hypnosis.	Complementary therapies have had mixed results so it is not clear how much they help. However, getting extra help from a counseling group and taking the nicotine patch and lozenge has worked for many people.	
I am worried about weight gain when I stop smoking.	Start slowly increasing your physical activity and be careful not to eat simply to replace smoking a cigarette. Also try eating vegetables and drinking water instead of having candy or chips. The benefits of quitting tobacco far outweigh the risk from weight gain.	
I don't understand how nicotine replacement therapies (NRTs) could be harmless if tobacco is harmful.	Studies have shown that medicinal nicotine in doses used in the patch, lozenge and gum is safe. What is harmful in tobacco—besides the higher level of addictive nicotine—are the 7,000 other chemicals, including at least 70 that cause cancer.	
My life is too stressful to quit tobacco.	Using tobacco is one way many people deal with stress. Over the long-term, quitting smoking has been shown to decrease anxiety and stress. Counseling may help you develop new and healthier ways to cope with your stress.	

Table 1. Addressing Common Concerns from Veterans About Quitting Tobacco (continued from page 8)

Patient	Provider
Can I use electronic cigarettes or vapes to quit smoking?	Some people have been able to quit successfully with electronic cigarettes, but they also may contain ingredients that are harmful. There is little known about the long-term risks. Using electronic cigarettes may be safer than smoking cigarettes; however, safer is not the same as safe. More is understood about using medications to help quit smoking that are approved by the Food and Drug Administration (FDA), like the nicotine patch and nicotine lozenge. So, these medications are recommended to use when quitting tobacco.

If a Veteran is not ready to quit in the next 30 days, use motivational interviewing techniques to help them to start thinking about quitting.

- Ask open-ended questions.
- Use reflective listening.
- Ask for permission to provide information or opinion.
 - "Can I give you some information on that?"
- Emphasize personal choice and control.
 - "Only you can make the decision to stop smoking".

Try using the 5 Rs to help increase motivation to quit and also to maintain motivation during a quit attempt:

Relevance	What are some things that concern you about your smoking?
Risk	How might smoking be affecting your health?
Reward	What could you gain by quitting smoking?
Roadblocks	What barriers do you have in quitting smoking?
Repetition	• Is it okay if I check in with you about your smoking next time we meet?

Figure 9. Medication and Counseling Together are the Most Effective Way to Quit Smoking¹²

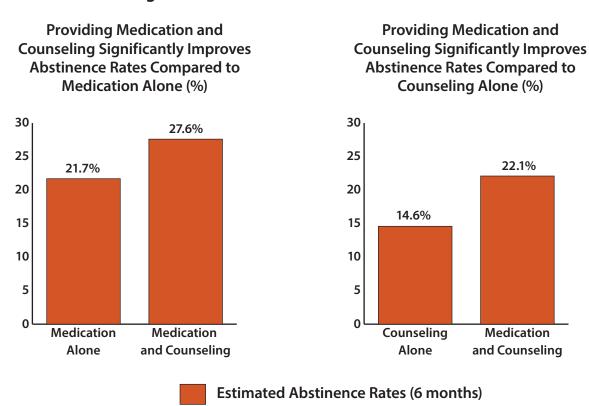
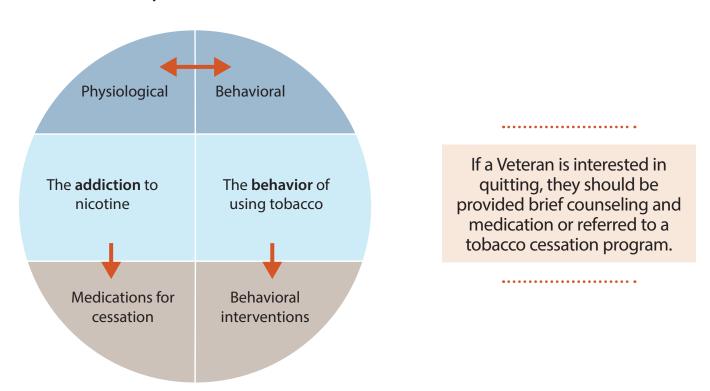


Figure 10. Treatment Should Address the Physiological and Behavioral Aspects of Dependence¹²



Pharmacotherapy for Tobacco Cessation

Tobacco cessation success is greatest when medication and behavioral counseling are used together during a quit attempt. When people stop using tobacco, they experience withdrawal symptoms, which include irritability, anxiety, depression, hunger, restlessness, insomnia, and cravings. Using FDA-approved medications helps manage nicotine withdrawal symptoms and reduce urges to use tobacco. Medication selection should be individualized for the Veteran based on their preferences, health conditions, other medications, and possible side effects.

Figure 11. Options for Pharmacotherapy



^{*}Not available on VA National Formulary and may require non-formulary request or prior authorization.

First-line Treatments

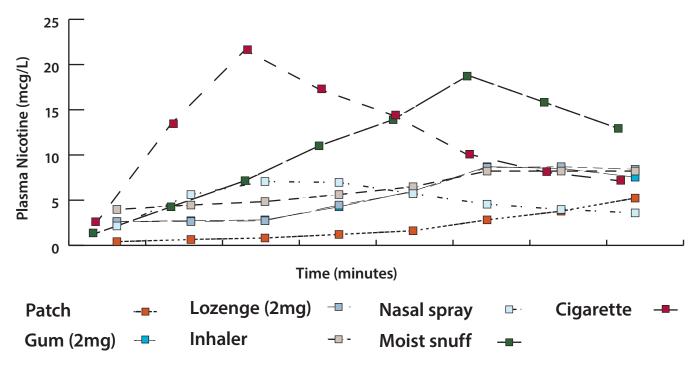
Combination therapy or varenicline are recommended first-line for tobacco cessation.

First-line for Tobacco Cessation			
Combination NRT	Nicotine patch + nicotine lozenge	Nicotine patch + nicotine gum	
Combination Bupropion/NRT	Bupropion + nicotine lozengeBupropion + nicotine gum	Bupropion + nicotine patch	
Varenicline	Varenicline monotherapy		

Monotherapy with NRT or bupropion can be considered for patients who are unable to tolerate combination therapy or wish to use monotherapy; however, cessation rates may be lower.

Plasma nicotine concentrations using the nicotine patch, nicotine lozenge, or nicotine gum as monotherapy are less than half of the peak achieved from a cigarette smoked over five minutes. The FDA approved the use of the nicotine patch in combination with the short-acting nicotine products (e.g., lozenge, gum, nasal spray) after clinical studies showed the products were safe to use in combination.

Figure 12. Cigarette Smoking Provides Significantly Higher Nicotine Levels Compared to NRT. The Risk of Nicotine Toxicity is Low from Combination NRT. 46-48



The concentration time curves in this graph depict levels achieved after administration of a single dose of nicotine following a period of overnight abstinence. The administration of nicotine varies with the cigarette smoked over five minutes, the moist snuff (two grams) placed between the cheek and gum for 30 minutes, inhaler used over 20 minutes (80 puffs), gum chew/park for over 30 minutes, the lozenge held in the mouth for approximately 30 minutes and the patch applied to the skin for one hour.

Using combination NRT with the nicotine patch in combination with the nicotine gum, lozenge, nasal spray, or inhaler is considered safe and provides lower nicotine levels than cigarette smoking.

Figure 13. Recommended Starting Dose for Combination NRT⁵⁴

DAILY CIGARETTE CONSUMPTION

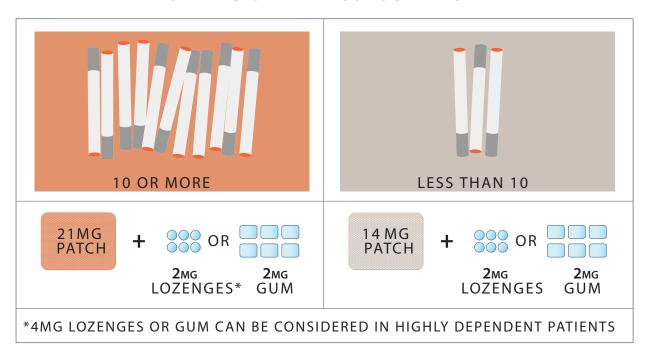
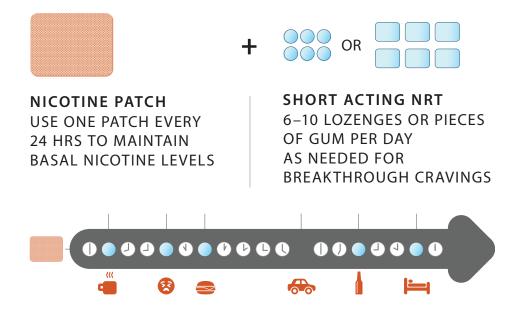
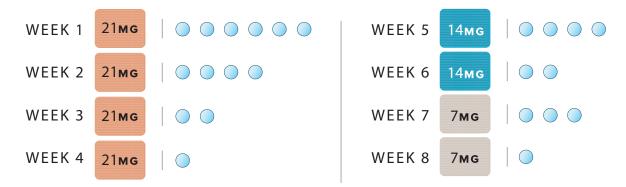


Figure 14. Start on Target Quit Day



Advise the Veteran to use the nicotine gum or lozenge when they have a craving for tobacco and to use before a situation where they may have a craving, like meeting with friends with whom they used to smoke. Once they have been using the combination for a few weeks, recommend starting other substitutes for tobacco like using sugar-free gum or mints, chewing on straws, or eating vegetables instead of the nicotine lozenge or gum. Explain that the goal is to eventually taper off the nicotine lozenge or gum.

Figure 15. Example Taper Schedule Using Nicotine Patch and Nicotine Lozenge Starting at Six Lozenges per Day



When the need for lozenges is reduced to one or two lozenges per day, the patient will be ready to reduce to the lower step nicotine patch. Reduce the dosage over the next two to six months.

Tapering may be extended past six months, particularly for patients with high nicotine dependence or trouble reducing dose of NRT.

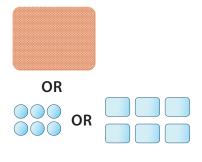
Figure 16. Combination Bupropion/NRT^{50,51}



SEVEN TO 14 DAYS BEFORE QUIT DAY

Start bupropion at 150mg SR once daily for three days then increase to 150mg SR twice daily.

NRT is not started until quit day.



QUIT DAY

Start NRT: Nicotine patch, gum or lozenge;*

Continue bupropion 150mg SR twice daily.



Continue bupropion for eight to 12 weeks and can consider longer.**

Stop nicotine patch at the same time as bupropion. If using nicotine lozenge or gum, then taper using the same schedule as combination NRT.

^{*}Only use one form of NRT when used in combination therapy with bupropion. Current evidence does not show that using multiple forms of NRT with bupropion is more effective. Nicotine lozenge or nicotine gum in combination with bupropion may be more effective than nicotine patch in combination with bupropion, based on current clinical evidence. **Bupropion may help with depressive symptoms, so some patients may benefit from longer term use. Do not use bupropion in patients with a history of seizures.

Table 2. Considerations When Using Varenicline

Prescribing

- Varenicline is a first line treatment for tobacco use disorder.
- Prescribing is open to all providers with prescribing privileges.
- Duration of therapy is typically 3 to 6 months but can be continued for 12 months.

Adverse Effects

- Most common adverse effects are nausea and vomiting. Take with food and 8 ounces of water to reduce these effects.
- Advise patients to report any mood changes, depression, and suicidal ideation.
- Use caution in patients with a history of seizures.
- May increase intoxicating effects of alcohol.

Avoid Prescribing in Veterans Who Have Had the Following:

- History of serious hypersensitivity or skin reactions to varenicline.
- Suicidal plan or attempt within the past 12 months.
- Unstable mental health disorder (e.g., actively experiencing symptoms of psychosis).

Figure 17. Starting Varenicline



AT LEAST SEVEN DAYS BEFORE OUIT DAY

Start varenicline at 0.5mg daily for days one though three, then 0.5mg twice daily for days four through seven, then 1mg twice daily.

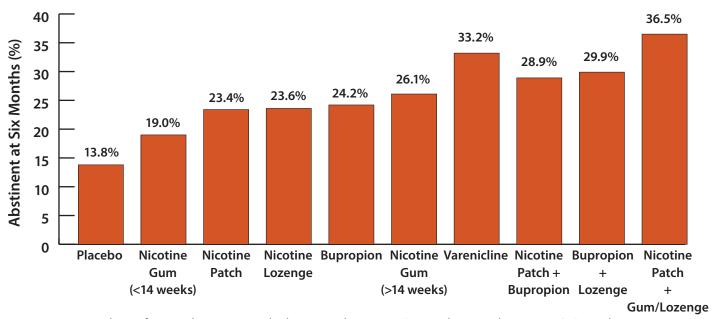


Continue varenicline for 12 to 24 weeks. Can consider longer treatment out to 52 weeks if needed.

When the patient is ready to stop varenicline, tapering is not necessary.

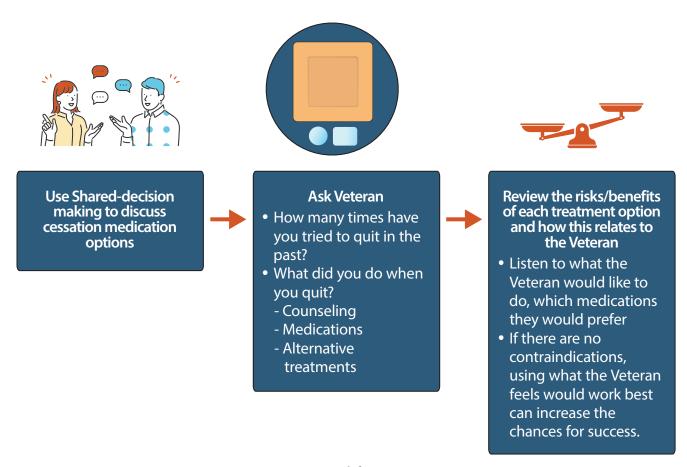
Figure 18. Combination Therapy is Significantly More Effective Than Monotherapy NRT or Bupropion and Comparable to Varenicline^{12,46–55}

Comparison of Monotherapy and Combination Therapies



Meta-analysis of many abstinence trials shows combination NRT, combination bupropion/NRT and varenicline monotherapy result in the highest rates of abstinence at six months.

Figure 19. Shared Decision Making – Options for Medications for Tobacco Cessation



Offer combination NRT, combination bupropion/NRT, or varenicline as first-line treatment options to patients wanting to quit.

Special Populations

Women

When working with women who use tobacco, different tobacco cessation approaches may need to be considered. Women smokers have higher relapse rates compared to men.⁵⁶ Women may smoke more in social settings and are more concerned about weight gain. These concerns are common reasons for relapse.

Figure 20. Smoking Rates in Female and Male Veterans in 2020⁵⁶

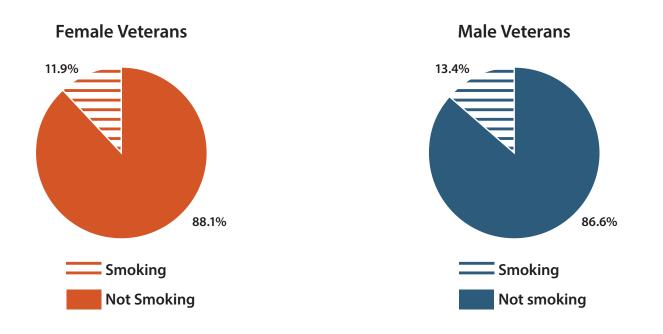


Figure 21. Smoking Related Risks for Women⁵⁷

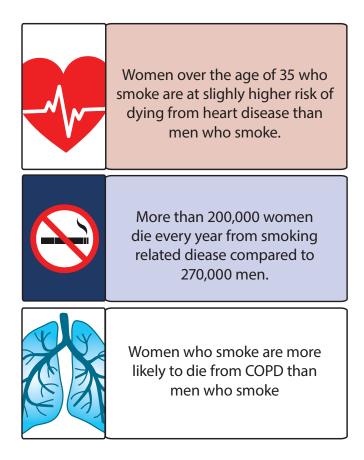
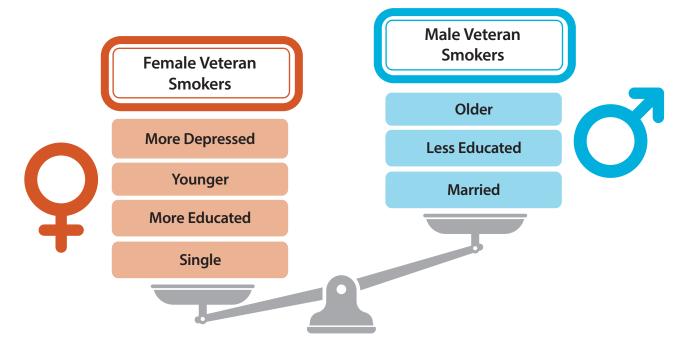


Figure 22. Comparing Female Veteran Smokers to Male Veteran Smokers⁵⁸⁻⁶¹



In addition to social and economic factors, women and men differ in how their bodies process nicotine. Metabolic differences can result in treatments that are not as effective.

Women may metabolize nicotine at a faster rate than men. 60,61

- Estrogen induces liver enzyme, Cytochrome P 450 (CYP)2D6.⁶⁰
- Nicotine is metabolized by CYP2D6.
- Induction of CYP2D6 results in faster metabolism of nicotine in women.
 - Nicotine replacement therapies may be be less effective in women particularly when monotherapy is used. 62,63 Combination therapy should be used.

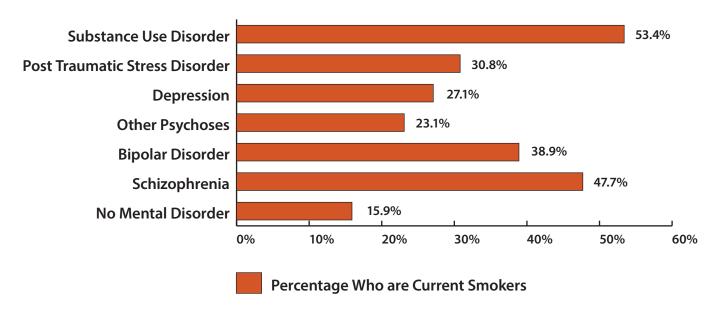
Varenicline and bupropion do not appear to have differences in efficacy based on gender.^{62–66}

Mental Health Populations

Smoking rates are significantly higher in mental health populations compared to populations without mental health comorbidities. Tobacco use is a significant risk factor for death in Veterans with mental health conditions.

Figure 23. Smoking Rate by Psychiatric History in VA⁶⁹

Veterans With Psychiatric Comorbidities Have Much Higher Smoking Rates than Veterans Without Psychiatric Comorbidities (%)



Adults with Mental Illness or Substance Use Disorder Account for 40% of All Cigarettes Smoked.⁶⁸



Table 3. Tobacco Use is a Significant Risk Factor for Death in Veterans with Mental Illness⁶⁹⁻⁷⁵

Tobacco Users with Mental Illness:

Die several years earlier, on average, than individuals without mental illness. Most deaths are due to smoking-related disease.

Have a greater risk of dying from cardivascular disease, respiratory illnesses, and cancer than those without mental illness.

Half of the mortality for people with schizophrenia, bipolar disorder, and depression is from tobacco-related diseases.

Tobacco use predicts future suicidal behavior in Veterans, independent of age, gender, psychiatric disorder, service connection and severity of medical comorbidities.

Providers may question whether their patients with mental health illnesses want to quit tobacco. There is also a concern by providers about whether stopping tobacco may worsen psychiatric conditions.

Figure 24. Readiness to Quit in Patients with Psychiatric Disorders⁷⁶

Smokers With Mental Illness or Addictive Disorders are Just as Ready to Quit Smoking as the General Population of Smokers

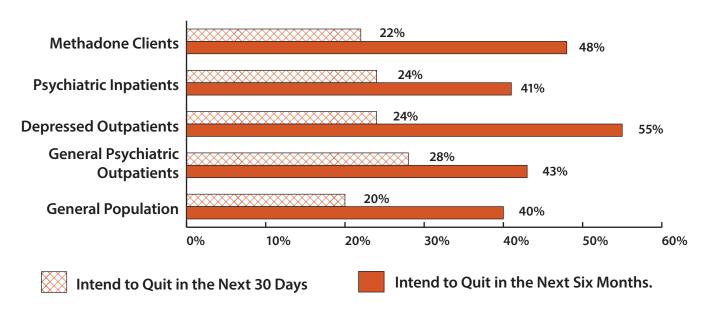


Table 4. Why Should Veterans with Schizophrenia Quit Tobacco?72-82

Patients with Schizophrenia who Smoke:

Have higher rates of hospitalization, higher medication doses and more severe psychiatric symptoms.

Have worse cognitive functioning and poorer functional outcomes than past or never smokers.

Spend almost 30% of their income on cigarettes.

Are 3.5 times more likely to die from tobacco-related diseases than smokers in the general population.

Have the highest mortality rate from cardiovascular disease, and lung cancer is the leading cause of cancer death in this population.

Recent studies are showing that mental health symptoms usually do not worsen following tobacco cessation, and quitting reduces symptoms of anxiety and depression.^{77–79}

Figure 25. Quitting Tobacco May Improve Mental Health Symptoms and Ultimately Improve Psychological Quality of Life. 77-79

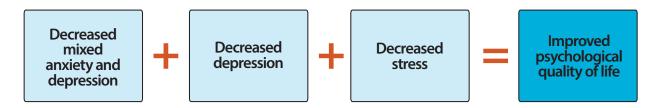


Table 5. Concerning Data for Smoking and Substance Use Disorder (SUD)^{68,83–88}

Smoking and SUD

Approximately two of every three individuals entering treatment for SUD also use tobacco.

Tobacco-related diseases account for 50% of deaths among individuals treated for alcohol use disorder.

Death rates are four times greater for cigarette smoking compared to non-smoking people with long-term drug use disorders.

Nicotine addiction and opioid addiction are mutually reinforcing → Smoking cessation is associated with higher rates of stopping illicit opioids when medication assisted treatment (MAT) is used.

Should we encourage Veterans to quit smoking during SUD treatment? Yes! Many people in SUD treatment want to quit smoking and have a good chance at doing so, especially with support like counseling and medication. It is not true that a person cannot try to quit smoking while they are in treatment or early recovery. Since smoking can sometimes trigger the desire to use another substance, quitting smoking may help in long-term recovery.

Figure 26. Smoking Cessation Interventions During SUD Treatment Increases Long-term Abstinence Rates of Drugs and Alcohol.⁸⁸

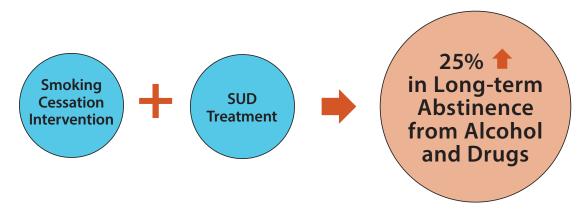


Table 6. Helping Veterans with Mental Illness and/or SUD Quit Tobacco^{68,83-88}

Considerations for Success

Evidence-based tobacco cessation medication treatments and group or individual counseling are effective for patients with and without mental illness and/or SUD.

Nicotine addiction may be more severe in patients with mental illness and/or SUD, so higher intensity treatments and interventions may be needed.

Veterans do not need to be free of mental health symptoms to quit tobacco.

Encourage Veterans with mental illness to use medications to quit tobacco. They will usually need combination treatment and sometimes higher doses and longer treatment duration.

People Living with HIV

Scope of the problem^{12,89-94}

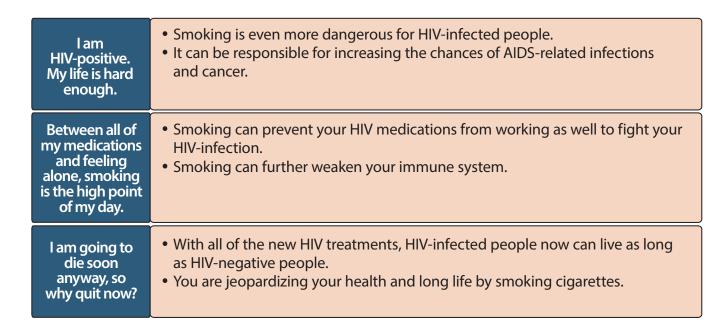
- Over 40% of people living with HIV in the U.S. are smokers.
- Tobacco dependence is a chronic disorder that often requires repeated intervention and multiple attempts to quit.¹²

- Overall health consequences of smoking for those with HIV disease are more severe, including:
 - Greater probability of cardiovascular and pulmonary conditions;
 - Greater risk of AIDS and non-AIDS related illnesses;
 - Smoking increases the all-cause mortality of HIV-infected current smokers.

Benefits of smoking cessation in HIV-infected smokers^{12,90–94}

- Smoking cessation can reduce and prevent many smoking-related health problems.
- Smoking is the most clinically important modifiable cardiovascular risk factor for HIV-infected smokers.
- HIV-related symptoms decrease as early as three months after smoking cessation.
- Smoking cessation extends life expectancy and improves quality of life in people with HIV.

Figure 27. Addressing Concerns About Tobacco Use Cessation by Veterans with HIV



Offer behavioral counseling and cessation medications to Veterans with mental health disorders, substance use disorders, and HIV who are interested in quitting.

This summary was written by:

Julianne Himstreet, Pharm D., BCPS Daina L Wells, Pharm D., BCPS, BCPP Sarah J. Popish, Pharm D., BCPP

We thank our expert reviewers:

Lori Bastian, MD, MPH
Jean Beckham, Ph.D.
Pam Belperio, Pharm D., BCPS, AAHIVP
Timothy Chen, Pharm D., BCPS
Dana Christofferson, Ph.D.
Mark Geraci, Pharm D., BCOP
Kim Hamlett-Berry, Ph.D.
Jennie Leskela, Ph.D., ABPP
Mark Myers, Ph.D.
Andrew Saxon, MD
William Unger, Ph.D.

REFERENCES

- Cornelius ME, Wang TW, Jamal A, Loretan C, Neff L. Tobacco Product Use Among Adults United States, 2019. Morbidity and Mortality Weekly Report, 2020. Volume 69(issue 46); pages 1736–1742. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm.
- Huang G, Muz B, Kim S, Gasper J. 2017 Survey of Veteran Enrollees' Health and Use of Health Care Data Findings.
 Department of Veterans Affairs. April 2018. https://www.va.gov/VHASTRATEGY/SOE2022/VASOE-FindingsReport-Final.pdf.
- 3. Jha P, Ramasundarahettige C, Landsman V, et al. 21st Century Hazards of Smoking and Benefits of Cessation in the United States. New England Journal of Medicine 2013;368:341–50.
- 4. WHO global report: mortality attributable to tobacco. Geneva: World Health Organization; 2012.
- 5. Stahre M, Roeber J, Kanny D, Brewer RD, Zhang X. Contribution of Excessive Alcohol Consumption to Deaths and Years of Potential Life Lost in the United States. *Prev Chronic Dis.* 2014;11:130293. DOI: http://dx.doi.org/10.5888/pcd11.130293.
- 6. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
- Centers for Disease Control and Prevention. QuickStats: Number of Deaths from 10 Leading Causes, by Sex National Vital Statistics System, United States, 2015. MMWR Morb Mortal Wkly Rep. 2017;66:413. DOI: http://dx.doi.org/10.15585/mmwr.mm6615a8.
- 8. U.S. Department of Health and Human Services. A Report of the Surgeon General: How Tobacco Smoke Causes Disease: What It Means to You. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2010 [accessed 2018 July 16].
- 9. National Toxicology Program. Report on Carcinogens, Thirteenth Edition. Research Triangle Park (NC): U.S. Department of Health and Human Sciences, National Institute of Environmental Health Sciences, National Toxicology Program, 2014 [accessed 2017 Jan 24].
- 10. Center for Disease Control and Prevention. At a Glance 2017 Tobacco Use: Extinguishing the Epidemic. From the 2014 Surgeon General's Report, Table 12.4, page 660. Accessed November 27, 2018.
- 11. Centers for Disease Control and Prevention. Quitting Smoking Among Adults—United States, 2000–2015. *Morbidity and Mortality Weekly Report*. 2017;65(52):1457–64 [accessed 2018 July 16].
- 12. Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008.
- 13. National Cancer Institute. Cigars: Health Effects and Trends. Smoking and Tobacco Control Monograph No. 9. Smoking and Tobacco Control Monograph No. 9. Bethesda (MD): National Institutes of Health, National Cancer Institute, 1998.
- 14. Campaign for Tobacco-Free Kids. The Rise of Cigars and Cigar-Smoking Harms[PDF–144 KB] Washington: Campaign for Tobacco-Free Kids.

- 15. American Cancer Society. Cigar Smoking. Atlanta: American Cancer Society.
- 16. U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health, 2012.
- 17. Campaign for Tobacco-Free Kids. The Rise of Cigars and Cigar-Smoking Harms[PDF–144 KB] Washington: Campaign for Tobacco-Free Kids.
- 18. World Health Organization. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 89: Smokeless Tobacco and Some Tobacco-Specific N-Nitrosamines [PDF–3.18 MB]. Lyon (France): World Health Organization, International Agency for Research on Cancer, 2007 [accessed 2017 Nov 3].
- 19. Mejia AB, Ling PM. Tobacco Industry Consumer Research on Smokeless Tobacco Users and Product Development. *American Journal of Public Health*. 2010;100(1):78–87 [cited 2016 Dec 8].
- 20. Center for Behavioral Health Statistics and Quality. 2014 National Survey on Drug Use and Health: Detailed Tables. Substance Abuse and Mental Health Services Administration, 2015, Rockville, MD.
- 21. Substance Abuse and Mental Health Services Administration. Results from the 2013 National Survey on Drug Use and Health: Detailed Tables, Table 2.36B. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2015.
- 22. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
- 23. Piano MR, Benowitz NL, Fitzgerald GA, Corbridge S, Heath J, Hahn E, et al. Impact of Smokeless Tobacco Products on Cardiovascular Disease: Implications for Policy, Prevention, and Treatment: A Policy Statement from the American Heart Association. *Circulation*. 2010;122(15):1520–44.
- 24. Connolly GN, Richter P, Aleguas A Jr, Pechacek TF, Stanfill SB, Alpert HR. Unintentional Child Poisonings Through Ingestion of Conventional and Novel Tobacco Products. *Pediatrics*. 2010;125(5):896–9.
- 25. Wyss A, Hashibe M, Chuang S, et.al. Cigarette, cigar, and pipe smoking and the risk of head and neck cancers: pooled analysis in the International Head and Neck Cancer Epidemiology Consortium. *Am J Epidemiol*. 2013;178(5):679–690.
- 26. American Lung Association. An Emerging Deadly Trend: Waterpipe Tobacco Use. [PDF–222 KB] Washington: American Lung Association, 2007 [accessed 2015 Sep 14].
- 27. American Lung Association. Hookah Smoking: A Growing Threat to Public Health Issue Brief.. [PDF–1.34 MB] Smokefree Communities Project, 2011 [accessed 2015 Sep 14].
- 28. Akl EA, Gaddam S, Gunukula SK, Honeine R, Jaoude PA, Irani J. The Effects of Waterpipe Tobacco Smoking on Health Outcomes: A Systematic Review. International Journal of Epidemiology 2010; 39:834–57 [accessed 2015 Sep 14].
- 29. Cobb CO, Ward KD, Maziak W, Shihadeh AL, Eissenberg T. Waterpipe Tobacco Smoking: An Emerging Health Crisis in the United States. *American Journal of Health Behavior*. 2010;34(3):275–85 [accessed 2015 Sep 14].
- 30. U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health, 2012 [accessed 2015 Sep 14].
- 31. Clarke TC, Schiller JS, Boersma P. Early release of selected estimates based on data from the 2019 National Health Interview Survey. National Center for Health Statistics National Health Interview Survey, 2019.
- 32. E-cigarette use among youth and young adults: a report of the Surgeon General [PDF–8.47 MB]. Atlanta, GA: US Department of Health and Human Services, CDC; 2016. QuickStats: Cigarette Smoking Status Among Current Adult E-cigarette Users, by Age Group National Health Interview Survey, United States, 2015. MMWR Morb Mortal Wkly Rep. 2016;65:1177.
- 33. Goniewicz ML, Gupta R, Lee YH, et al. Nicotine levels in electronic cigarette refill solutions: a comparative analysis of products from the U.S., Korea, and Poland. *Int J Drug Policy*. 2015;26(6):583–588.
- 34. Quickstats: Percentage of adults who ever used an e-cigarette and percentage who currently use e-cigarettes, by age: National Health Interview Survey, United States, 2016. MMWR Morb Mortal Wkly Rep. 2017.
- 35. U.S. Food and Drug Administration. E-Cigarettes, Vapes, and other Electronic Nicotine Delivery Systems (ENDS). Accessed 8/7/2023.
- 36. McRobbie H1, Bullen C, Hartmann-Boyce J, Hajek P; Cochrane Database Syst Rev. Electronic cigarettes for smoking cessation and reduction. 2014;(12):CD010216. doi: 10.1002/14651858.CD010216.pub2. Epub 2014 Dec 17.
- 37. Camenga DR, Tindle HA. Weighing the Risks and Benefits of Electronic Cigarette Use in High-Risk Populations. *Medical Clinics of North America*. 2018-07-01, Volume 102, Issue 4, Pages 765–779.

- 38. Primack B.A., Soneji S., Stoolmiller M., et.al. Progression to traditional cigarette smoking after electronic cigarette use among US adolescents and young adults. *JAMA Pediatr*. 2015; 169: pp. 1018–1023.
- 39. Caraballo RS, Shafer PR, Patel D, Davis KC, McAfee TA. Quit Methods Used by US Adult Cigarette Smokers, 2014–2016. Prev Chronic Dis 2017; 14:160600.
- 40. Center for Disease Control and Prevention. Electronic Cigarettes: What's the Bottom Line. https://www.cdc.gov/tobacco/basic_information/e-cigarettes/pdfs/Electronic-Cigarettes-Infographic-508.pdf. Accessed July 16, 2018.
- 41. Drope JD, Cahn A, Kennedy R, et.al. Key issues surrounding the health impacts of electronic nicotine delivery systems (ENDS) and other sources of nicotine. *CA Cancer J Clin*. 2017;67: 449–471.
- 42. DiClemente C.C., Prochaska J.O., Fairhurst S.K., Velicer W.F., Velasquez M.M., Rossi J.S. The process of smoking cessation: An analysis of precontemplation, contemplation and preparation stages of change. *J. Consult. Clin. Psychol.* 1991;59:295–304. doi: 10.1037/0022-006X.59.2.295.
- 43. American Cancer Society. Guide to Quitting Smoking. https://www.cancer.org/cancer/risk-prevention/tobacco/guide-quitting-smoking.html (accessed 20 Jul 2018).
- 44. Scollo M, Winstanley M, Ellerman A, et.al. Smoking cessation: 7.7: personal factors associated with quitting. In: Scollo M, Winstanley M, eds. Tobacco in Australia: facts and issues. 3rd edn. Carlton, VIC: Cancer Council Victoria, 2008:52.
- 45. Chaiton M, Diemert L, Cohen JE, et al Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers BMJ Open 2016;6:e011045. doi: 10.1136/bmjopen-2016-011045.
- 46. Choi, J. H., Dresler, C. M., Norton, M. R., & Strahs, K. R. (2003). Pharmacokinetics of a nicotine polacrilex lozenge. *Nicotine & Tobacco Research*, 5(5), 635–644.
- 47. Fant, R. V., Henningfield, J. E., Nelson, R. A., & Pickworth, W. B. (1999). Pharmacokinetics and pharmacodynamics of moist snuff in humans. *Tobacco Control*, 8(4), 387–392. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1759743/.
- 48. Schneider, N. G., Olmstead, R. E., Franzon, M. A., & Lunell, E. (2001). The nicotine inhaler: clinical pharmacokinetics and comparison with other nicotine treatments. *Clinical Pharmacokinetics*, 40(9), 661–684.
- 49. Stead, L. F., Perera, R., Bullen, C., Mant, D., & Lanca ster, T. (2008). Nicotine replacement therapy for smoking cessation. *Cochrane Database of Systematic Reviews*, (1), CD000146. doi: 10.1002/14651858.CD000146.pub3.
- 50. Piper, M. E., Smith, S. S., Schlam, T. R., Fiore, M. C., Jorenby, D. E., Fraser, D., & Baker, T. B. (2009). A randomized placebo-controlled clinical trial of 5 smoking cessation pharmacotherapies. *Archives of General Psychiatry*, 66(11), 1253–1262. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2933113/?tool=pubmed.
- 51. Smith, S. S., McCarthy, D. E., Japunitch, S. J., Christiansen, B., Piper, M. E., Jorenby, D. E., Fraser, D. L., Fiore, M. C., Baker, T. B., & Jackson, T. C. (2009). Comparative effectiveness of 5 smoking cessation pharmacotherapies in primary care clinics. *Archives of Internal Medicine*, 169(22), 2148 2155. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2891174/?tool=pubmed.
- 52. Tulloch HE, Pipe AL, Els C, et.al. Flexible, dual-form nicotine replacement therapy or varenicline in comparison with nicotine patch for smoking cessation: a randomized controlled trial. *BMC Med*. 2016 Jun 7;14:80. doi: 10.1186/s12916-016-0626-2.
- 53. Baker TB1, Piper ME1, Stein JH2, et.al. Effects of Nicotine Patch vs Varenicline vs Combination Nicotine Replacement Therapy on Smoking Cessation at 26 Weeks: A Randomized Clinical Trial. *JAMA*. 2016 Jan 26;315(4):371–9. doi: 10.1001/jama.2015.19284.
- 54. Hsia SL, Myers MG, Chen TC. Combination nicotine replacement therapy: strategies for initiation and tapering. *Preventive Medicine*. 2017;97:45–49.
- 55. Varenicline (Chantix) Prescribing Information. Pfizer Laboratories. Revised 2/2019. https://www.pfizermedicalinformation.com/en-us/chantix/principal-display. Accessed August 2023.
- 56. Sherman SE, Fu SS, Joseph AM, et.al. Gender differences in smoking cessation services received among veterans. *Womens Health Issues*. 2005 May-Jun;15(3):126–33.
- 57. Odani S, Agaku IT, Graffunder CM, Tynan MA, Armour BS. Tobacco Product Use Among Military Veterans United States, 2010–2015. MMWR Morb Mortal Wkly Rep. 2018;67:7–12. DOI: https://www.cdc.gov/mmwr/volumes/67/wr/mm6701a2.htm?s cid=mm6701a2 w.
- 58. McClernon FJ, Calhoun PS, Hertzberg JS, et.al. Associations between smoking and psychiatric comorbidity in U.S. Iraq- and Afganistan-era Veterans. Psychol Addict Behav. 2013 Dec; 27(4): 10.1037/a0032014.
- 59. Greaves L. The meanings of smoking to women and their implications for cessation. *Br J Health Psychol*. 2018 May 15. doi: 10.1111/bjhp.12314.
- 60. Higashi E, Fukami T, Itoh M, et al. Human CYP2A6 is induced by estrogen via estrogen receptor. *Drug Metab Dispos*. 2007 Oct;35(10):1935–41.

- 61. Johnstone E, Benowitz N, Cargil A, et al., Determinants of the rate of nicotine metabolism and effects on smoking behavior. *Clin Pharmacol Ther.* 2006;80(4):319–330.
- 62. Perkins KA, Scott J. Sex differences in long-term smoking cessation rates due to nicotine patch. *Nicotine Tob Res.* 2008 Jul;10(7):1245–50.
- 63. Cepeda-Benito A1, Reynoso JT, Erath S. Meta-analysis of the efficacy of nicotine replacement therapy for smoking cessation: differences between men and women. *J Consult Clin Psychol*. 2004 Aug;72(4):712–22.
- 64. Scharf D, Shiffman S. Are there gender differences in smoking cessation, with and without bupropion? Pooled- and meta-analyses of clinical trials of Bupropion SR. *Addiction*. 2004 Nov;99(11):1462–9.
- 65. Levine MD1, Perkins KA, Kalarchian MA, et.al. Bupropion and cognitive behavioral therapy for weight-concerned women smokers. *Arch Intern Med.* 2010 Mar 22;170(6):543–50. doi: 10.1001/archinternmed.2010.33.
- 66. Glatard A, Dobrinas M, Gholamrezaee M. et.al. Association of nicotine metabolism and sex with relapse following varenicline and nicotine replacement therapy. *Exp Clin Psychopharmacol*. 2017;25(5):353–362.
- 67. Duffy SA, Kilbourne AM, Austin KL, Dalack GW, Woltmann EM, Waxmonsky J, Noonan D. 2012. Risk of smoking and receipt of cessation services among Veterans with mental disorders. *Psychiatric Services*. 63 (4): 325–32.
- 68. Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (February 5, 2013). *The NSDUH Report: Smoking and mental illness*. Rockville, MD.
- 69. Colton, C.W. and R. W. Manderscheid. Congruencies in Increased Mortality Rates, Years of Potential Life Lost, and Causes of Death Among Public Mental Health Clients in Eight States. Preventing Chronic Disease: Public Health Research, Practice, and Policy. April 2006 3(2): 1–14.
- 70. Dalton SO, Laursen TM, Mellemkjaer L, Johansen C, Mortensen PB. Risk for cancer in parents of patients with schizophrenia. *Am J Psychiatry*. 2004;161:903–8.
- 71. Himelhoch S, Lehman A, Kreyenbuhl J, Daumit G, Brown C, Dixon L. Prevalence of chronic obstructive pulmonary disease among those with serious mental illness. *Am J Psychiatry*. 2004;161:2317–9.
- 72. Lichtermann D, Ekelund J, Pukkala E, Tanskanen A, Lonnqvist J. Incidence of cancer among persons with schizophrenia and their relatives. *Arch Gen Psychiatry*. Jun 2001;58(6):573–578.
- 73. Olfson M, Gerhard T, Huang C, et.al. Premature mortality among adults with schizophrenia in the United States. *JAMA Psychiatry*. N2015 Dec;72(12):1172–81.
- 74. Callaghan RC, Veldhuizen S, Jeysingh T, et al. Patterns of tobacco-related mortality among individuals diagnosed with schizophrenia, bipolar disorder, or depression. *J Psychiatr Res.* 2014;48:102–10.
- 75. Bohnert KM, Ilgen MA, McCarthy JF, et.al. Tobacco use disorder and the risk of suicide mortality. *Addiction*. 2014 Jan; 109(1):155–162.
- 76. Shroeder S, Morris CD. Confronting a Neglected Epidemic: Tobacco Cessation for Persons with Mental Illnesses and Substance Abuse Problems. *Annual Review of Public Health*. 2010 31:1, 297–314.
- 77. Hall SM, Prochaska JJ. Treatment of smokers with co-occurring disorders: emphasis on integration in mental health and addiction treatment settings. *Annu Rev Clin Psychol.* 2009; 5:409–31.
- 78. Prochaska JJ. Smoking and mental illness breaking the link. N Engl J Med. 2011 Jul 21; 365(3): 196–198. doi: 10.1056/NEJMp1105248.
- 79. Prochaska JJ, Das S, Young-Wolff KC. Smoking, Mental Illness, and Public Health. *Annual review of public health*. 2017;38:165–185. doi:10.1146/annurev-publhealth-031816-044618.
- 80. Depp CA, Bowie CR, Mausbach BT, et.al. Current smoking is associated with worse cognitive an adaptive functioning in serious mental illness. *Acta Psychiatr Scand*. 2015 May;131(5):333–41. doi: 10.1111/acps.12380.
- 81. Steinberg, M. L., Ziedonis, D. M., Krejci, J. A., et.al. Motivational interviewing with personalized feedback: a brief intervention for motivating smokers with schizophrenia to seek treatment for tobacco dependence. *Journal of Consulting and Clinical Psychology*, 72(4), 723–728.
- 82. Taylor G, McNeill A, Girling A, Farley A, Lindson-Hawley N, Aveyard P. Change in mental health after smoking cessation: systematic review and meta-analysis. *The BMJ*. 2014;348:g1151. doi:10.1136/bmj.g1151.
- 83. Hurt RD, Offord KP, Croghan IT, et al. Mortality following inpatient addictions treatment. Role of tobacco use in a community-based cohort. *JAMA*. Apr 10 1996;275(14):1097–1103.
- 84. Hser YI, Gelbert L, Hoffman V, Grella CE, McCarthy W, Anglin MD. 2004. Health conditions among aging narcotics addicts: Medical Examination Results. *J. Behav. Med.* 27: 607–22.
- 85. Hser YI, McCarthy WJ, Anglin MD. 1994. Tobacco use as a distal predictor of mortality among long-term narcotics addicts. *Prev. Med.* 23: 61–9.

- 86. Yoon JH, Lane SD, Weaver MF. Opioid analgesics and nicotine: more than blowing smoke. *J Pain Palliat Care Pharmacother*. 2015;29:281–9.
- 87. Mannelli P, Wu LT, Peindl KS, Gorelick DA. Smoking and opioid detoxification: behavioral changes and response to treatment. *Nicotine Tob Res.* 2013;15:1705–13.
- 88. Prochaska JJ, Delucchi K, Hall SM. A meta-analysis of smoking cessation interventions with individuals in substance abuse treatment or recovery. *J Consul Clin Psychol*. 2004;72:1144–1156.
- 89. Mdodo R, Frazier EL, Dube SR et al. Cigarette smoking prevalence among adults with HIV compared with the general adult population in the United States: cross-sectional surveys. *Ann Intern Med.* 2015; 162:335–44.
- 90. Rasmussen LD, Helleberg M, May MT et al. Myocardial infarction among Danish HIV-infected individuals: population-attributable fractions associated with smoking. *Clin Infect Dis*. 2015; 60:1415–23.
- 91. Crothers K, Huang L, Goulet JL et al. HIV infection and risk for incident pulmonary diseases in the combination antiretroviral therapy era. *Am J Respir Crit Care Med.* 2011; 183:388–95.
- 92. Helleberg M, Gerstoft J, Afzal S et al. Risk of cancer among HIV-infected individuals compared to the background population: impact of smoking and HIV. AIDS. 2014; 28:1499–508.
- 93. Crothers K, Goulet JL, Rodriguez-Barradas MC et al. Impact of cigarette smoking on mortality in HIV-positive and HIV-negative veterans. *AIDS Educ Prev.* 2009; 21:40–53.
- 94. Reddy KP, Parker RA, Losina E, et.al. Impact of cigarette smoking and smoking cessation on life expectancy among people with hiv: a US-based modeling study. *J Infect Dis.* 2016 Dec 1; 214(11):1672–1681.

U.S. Department of Veterans Affairs

This reference guide was created as a tool for VA providers and is available from the Academic Detailing Service SharePoint.

These are general recommendations only. The treating provider should make clinical decisions based on an individual patient's clinical condition.

VA PBM Academic Detailing Service Email Group PharmacyAcademicDetailingProgram@va.gov

VA PBM Academic Detailing Service SharePoint Site https://dvagov.sharepoint.com/sites/vhaacademicdetailing

VA PBM Academic Detailing Public WebSite http://www.pbm.va.gov/PBM/academicdetailingservicehome.asp

January 2022 V2